YALE JOURNAL OF BIOLOGY AND MEDICINE 72 (1999), pp. 15-18.

CASE REPORT

A 70-Year-Old Man with Isolated Weight Loss and a Pellagra-Like Syndrome Due to Celiac Disease

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An elderly man was diagnosed with celiac disease, which presented with three notable features: first, presentation at the age of 70 with no prior gastrointestinal symptomatology or positive family history; second, triggering of all symptoms following recent myocardial infarction and infective endocarditis; third, presentation with marked (more than 20 percent) weight loss and pellagra-like skin lesions despite nearly normal examination and laboratory tests. Thus, celiac disease may present as a pellagra-like syndrome in the elderly with predominant weight loss that is enhanced by the related taste disturbances.

INTRODUCTION

Celiac disease (CD)[b] is the result of severe mucosal damage to the small intestine leading to malabsorption and resulting from a localized immune response to the α gliadin fraction of ingested gluten, a water insoluble protein of wheat [1]. Our understanding of the immunological mechanisms of CD has greatly increased in recent years [2] and so have the number of cases diagnosed in elderly patients [3] and the realization that CD may present atypically at any age and have diverse manifestations that often evolve over many years and elude diagnosis. This is particularly true in elderly patients who are more prone to develop malignant diseases, psychiatric disorder, or infectious diseases with unusual presentations, whereas CD has been traditionally considered to be a disease of children and young adults. Thus, the possibility of CD in elderly patients is often not seriously considered even by experienced clinicians; yet, once diagnosed, it is a highly treatable condition, readily reversible upon withdrawal of gluten from the diet.

Very few case reports of CD patients diagnosed in their seventh decade without any previous symptomatology have been published so far. We report such a case, which was characterized by a sudden onset following myocardial infarction, a marked weight loss with minimally abnormal examination and laboratory tests, and the development of a pellagra-like syndrome that caused not only skin changes but also severe anorexia and taste changes greatly contributing to the loss of weight.

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[b] *Abbreviations:* CD, celiac disease.

CASE REPORT

A 70-year-old man of European origin was admitted for the evaluation of a marked weight loss over three months. His past history included essential hypertension for over 30 years and smoking (40 pack years). In September of 1995, he had uncomplicated acute inferior wall myocardial infarction and a week later a prolonged febrile illness diagnosed as culture-negative mitral valve endocarditis that responded to empiric antibiotic therapy. He was discharged on atenolol 50 mg/day and aspirin 100 mg/day, afebrile, with normal laboratory values, but became anorectic and complained of changes in taste, food aversion and a loss of 15 kg (more than 20 percent) of his prior body weight over three months. No associated pain, fever, or additional symptoms were noted, but after several weeks, watery diarrhea appeared about four times a day. Examination revealed a slightly pale, cachectic elderly patient with no distress. His speech was slurred, and his wife noted recent forgetfulness, but the neurological examination was otherwise normal, and there were no signs of depression. He had murmurs of right carotid artery stenosis, mitral regurgitation, and an epigastric murmur. His blood pressure was 85/50 (bilateral) with a regular pulse of 72/min, clear lungs, and no signs of heart failure. No lymphadenopathy was found; the liver and spleen were not enlarged, and examination of the abdomen was unremarkable.

Skin changes, especially over the joints and dorsum of the hands, were noted (hyperpigmentation and scaliness), as well as diffuse hair loss. No changes in the oral mucosa were found, and examination of the nasopharynx was unremarkable, but the skin lesions later progressed and became characteristic of pellegra (hyperpigmented, well-demarcated, scaly, and pruritic).

Initial laboratory tests were as follows: ESR 12 mm/hr (Westergren), and C-reactive protein <6 mg/dl; Hb 12 gm/dl (MCV-83 MCH 26) with a normal peripheral blood smear except for mild anisocytosis (RDW 17). Serum iron was 60 μg/dl, TIBC 246 μg/dl, and ferritin 40 ng/ml (all within normal limits). WBC was 7.5 x 10^3 cells/μl (normal differential) and platelets 324 x 10^3/μl. PT was 69 percent of control, PPT 23 sec and no fibrin split products were found. Stool analysis was considered repeatedly normal. Urine analysis, kidney function tests, and electrolytes were normal, as were the liver function tests and muscle enzymes. Serum albumin was 4.3 and globulins 2.2 gm/dl with normal protein electrophoresis and serum immunoglobulin levels. Serum cholesterol was 170 mg/dl and triglycerides 173 mg/dl.

Chest X-ray and ECG were normal except for evidence of old inferior myocardial infarction. Transesophageal echocardiography showed no new finding. Extensive microbiological and serological work-up for infectious diseases and autoantibody screen were negative. Thyroid and adrenal function tests were normal. Abdominal CT and ultrasound were normal. Barium enema, colonoscopy, and endoscopy were also normal. Duplex of the celiac axis revealed no significant stenosis. Barium swallow suggested mucosal thickening in the region of the first part of the duodenum without deformity or ulceration, possibly the result of an external pressure. The jejunum and ileum appeared normal. Endoscopic ultrasound demonstrated a normal pancreas and confirmed a duodenal mucosal infiltration with no adjacent lymphadenopathy or mass. Biopsies obtained then, and again at a second endoscopy (which also revealed two thin longitudinal ulcerations in the duodenum), showed flat mucosa (absence of villi) and extensive lymphoplasmacytoid infiltration, both intraepithelial and in the lamina propria. There was no evidence of malignancy, and tests for *Helicobacter pylori* were negative.

Laboratory studies at that time (at their worst) were as follows: Hb 11.8 (83, 24); with normal ESR, WBC and platelets. PT 65 percent of control. Serum albumin 2.9 gm/dl and calcium 8.5 mg/dl. Serum

iron 51 μq/dl (N > 50), folate 5.3 ng/ml (N > 5.7) and B_{12} 200 pg/ml (N > 200). Serum Mg 1.4 meq/l (N > 1.7), Zn 44 μg/dl (N > 50). Serum cholesterol levels were 166 mg/dl (triglycerides 111) and carotene 13 μg/dl (N > 10). Xylose test showed a serum level of 21 mg/dl at one hour after ingestion (N 20 to 200). Bone densitometry was normal. Anti-gliadin antibodies were positive for IgG (29; N < 20) but not IgA (19; N < 20) and IgA antiendomysial antibodies were strongly positive (+4). HLA typing showed the patient to be HLA B8 positive.

The patient was started on a gluten-free diet, intramuscular nicotine acid and oral supplements of minerals and vitamins. The lack of taste for food, slurred speech, forgetfulness, and skin signs all disappeared within three to four weeks and the diarrhea stopped. Subsequently, the patient regained his former weight, albeit slowly. A repeat endoscopy and duodenal biopsy at four months was normal, except for mildly blunted villi and minimal increase in intraepithelial lymphocytes. Subsequently, he underwent successfully right carotid endarterectomy followed by coronary artery bypass grafting.

COMMENTS

Our patient clearly had celiac disease based on the typical biopsy, the highly specific antiendomysial antibodies, and the dramatic clinical and histological response to a gluten-free diet [1]. However, several features of this case are unusual and noteworthy. First, our patient was 70 years old on diagnosis, yet he had no past history of compatible complaints nor any affected relatives. CD has traditionally been regarded as affecting primarily children and young adults often remitting in adolescence [1]. It is often not seriously considered in elderly patients, especially if they have no prior history to suggest it or are monosymptomatic. This view should be modified and the index of suspicion heightened since in a recent British series about one in five patients in whom CD was diagnosed were aged 60 or over [3]. Over half of these patients had a relatively short history, and almost one-third did not have any gastrointestinal symptoms. These findings are well supported by two previous series [4, 5]. Thus, elderly CD patients may present solely as unexplained lassitude [3], anemia [6], or even unexplained neurological dysfunction [7]. The diagnosis of elderly patients as having CD is largely a matter of the last decade and is directly related to the increased utilization of endoscopies and biopsies and to the advent of serological diagnostic methods that appear to be highly sensitive and specific [5, 8]. Elderly patients with CD are, therefore, likely to be increasingly recognized in the future and effectively treated. Since at this age there is an increased prevalence of neoplastic diseases on the one hand and of "nonspecific" functional decline on the other, physicians should become more aware of the association between CD and old age and of its highly varied and atypical presentations, as well as of its high potential for cure.

Second, interestingly, our patient's symptoms started immediately upon his recovery from an acute myocardial infarction followed by endocarditis. He reported absolutely no problems before, though he may have had asymptomatic (clinically-latent) CD [9] and was certainly geneticall-y predisposed, having the HLA-B8 marker [9]. Environmental factors (with the possible exception of adenovirus 12 infection) are not well recognized in the pathogenesis of CD. Since CD may be viewed, in fact, as an organ-specific autoimmune disorder [10], it is tempting to speculate that acute stress may trigger or enhance a localized immune response in the gut, in analogy to the well-known deleterious effects of stress on non-organ specific autoimmune disease such as systemic lupus erythematosus [11].

Third, it is intriguing to note that our patient's marked weight loss of more than 20 percent of his prior body weight occurred not only in the presence of a

near-normal physical examination, but also with almost entirely normal laboratory test results and with evidence of only a very limited extent of gut involvement, predominantly affecting only the duodenum. It was only during his evaluation over a few weeks that disease progression caused a pellagra-like skin eruption and that slightly decreased serum albumin, folate, magnesium, zinc, etc., became evident. Thus, we believe that this patient's marked weight loss was not so much the result of malabsorption as it was linked to a severely reduced food intake that was related to his anorexia and taste disturbances. A work-up for possible CD should no doubt be added to the evaluation of patients who present for an investigation of loss of weight, even when physical examination and laboratory tests are noncontributory and not suggestive of malabsorption [12]. Finally, our patient had skin changes on the dorsum of his hand and fingers (less pronounced on his feet), which, as they progressed, became pellagra-like [13]. They also responded to therapy and disappeared once intramuscular nicotinic acid was administered and food intake gradually increased following the commencement of a gluten-free diet. The patient also had anorexia, marked changes in taste that preceded glossitis by several months, and forgetfulness. This clinical picture is suggestive of a partial picture of pellagra, which is the result of niacin deficiency and rarely encountered today in the developed world other than in the context of malabsorption or of a severely compromised food intake [14, 15]. Our patient had both, and a pellagra-like syndrome should, thus, be added to the rare presentations of celiac disease in the elderly.

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